

Images

Dynamic Mercedes-Benz Sign in the Right Atrium

Ryo Tanabe^{1,2)}, Hiroki Matsuura³⁾, Yuki Otsuka²⁾, and Akira Endo¹⁾**Key Words:**

Dynamic Mercedes Benz sign, Venous air embolism, Venipuncture

An 87-year-old woman with an acute history of fever and cough presented to our emergency department. Non-contrast chest computed tomography (CT) revealed the unexpected presence of air in the right atrium (**Figure 1A**). Air embolisms in the heart are observed as the Mercedes-Benz sign ⁽¹⁾, which is commonly observed in gallstones. This sign is not usually detected via electrocardiography-synchronized CT because its motion artifact is due to the heartbeat. They are detected via unenhanced chest CT in no less than 5.5% of asymptomatic patients after securing a peripheral venous line ⁽²⁾. Patients with a patent foramen ovale are at a risk of end-organ ischemia due to venous air embolism. Clinicians should be aware of the possible complication of venipuncture and should carefully follow-up patients who present with a Mercedes-Benz sign regardless of additional symptoms, such as paralysis. Our patient did not exhibit additional symptoms. Air was not observed on the follow-up CT 2 days later (**Figure 1B**).

Article Information**Conflicts of Interest**

None

Author Contributions

Ryo Tanabe contributed to manuscript preparation, patient care, and discussion. Hiroki Matsuura, Yuki Otsuka, Akira Endo contributed to the discussion on the definitive diagno-

sis.

Informed Consent

Informed consent has been obtained from the patient for the publication of their information, including photographs.

Approval by Institutional Review Board (IRB)

This study did not require IRB approval.

References

1. Emby DJ, Ho K. Air embolus revisited—a diagnostic and interventional radiological perspective (bubble trouble and the dynamic Mercedes Benz sign). *South African J Radiol.* 2006;10(1):3-7.
2. Groell R, Schaffler GJ, Rienmueller R, et al. Vascular air embolism: location, frequency, and cause on electron beam CT studies of the chest. *Radiology.* 1997;202(2):459-62.

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JMA J. 2020;3(4):353-354
Received: April 3, 2020 / Accepted: July 20, 2020 / Advance Publication: October 2, 2020 / Published: October 15, 2020
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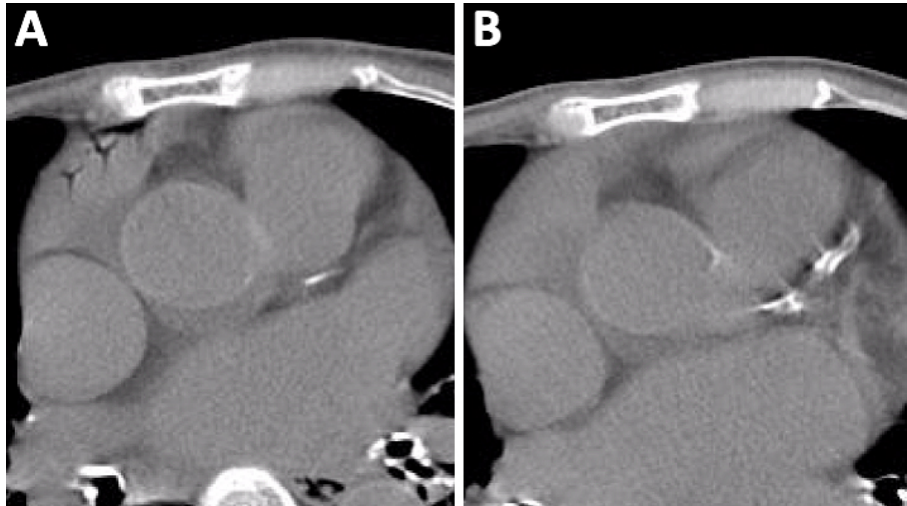


Figure 1. A. Electrocardiography-asynchronized computed tomography (CT) showing unexpected air (dynamic Mercedes-Benz sign) in the right atrium.
B. Air was not observed on the follow-up CT performed 2 days later.